

for *Baldwin 12571, 15048, and 15089*. The last three numbers had the odor that characterizes the species; no odor could be detected for *15088*. The conclusion seems inescapable that *M. odorata* does not have its fragrance until anthesis, *i.e.*, in late winter and spring. Miss Lehman, collecting the immature plants upon which Burnham founded his species, correctly noted that they were scentless.

Neither morphological characters of flowers, nor time of flowering, nor absence of odor are legitimate bases for maintaining *M. Lehmaniae* as a good species.

Spawn's (1938-1939 ?) distribution map for the representatives of *Monotropis*, already weak at the time of publication because of inadequate attention to collections and careful records, needs further revision if my reduction of *M. Lehmaniae* is accepted.

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#### LITERATURE CITED

- ARTZ, LENA. 1934. *Monotropis odorata* near Williamsburg. *Claytonia* **1**: 16.
- BURNHAM, STEWART H. 1906. A new species of *Monotropis*. *Torreyia* **6**: 234-235.
- COPELAND, HERBERT F. 1939. The structure of *Monotropis* and the classification of the *Monotropoideae*. *Madroño* **5**: 105-119.
- ERLANSON, EILEEN W. 1924. The flora of the peninsula of Virginia. *Papers Mich. Acad. Sci.* **4**: 115-182.
- FERNALD, M. L. 1943. Virginian botanizing under restrictions. *RHODORA* **45**: 357-413.
- PLITT, CHARLES C. 1909. Notes on *Monotropis odorata*. *RHODORA* **11**: 153-154.
- SMALL, JOHN K. 1933. *Manual of the southeastern flora*. Published by the author, New York.
- SPAWN, WILLMAN. 1938-1939 ?. Notes on *Monotropis*. *Bartonia* **20**: 7-11.
- WOLF, W. 1922. Notes on Alabama plants. A new monotropoid plant. *Amer. Midl. Nat.* **8**: 104-127.

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ECHINOCHLOA WALTERI IN CONCORD, MASSACHUSETTS.—Attention previously has been called to the probable effect of sewage pollution of the Sudbury-Concord River system in eastern Massachusetts on certain elements of its aquatic and riparian vegetation assumed to be due to a change from a natural slightly acid to a neutral or even basic environment supplied by the decomposition of sewage wastes. (Eaton, 1947).

Another probable instance of this phenomenon is suggested by what I imagined to be the initial discovery in 1956 of an abundant stand of *Echinochloa Walteri* (Pursh) Nash on moist gravel along a low impoundment dyke at the Great Meadows National Wildlife Refuge in Concord. A specimen collected by the author on September 10, 1956, has been placed in the Herbarium of the New England Botanical Club. Professor G. L. Church has kindly verified the determination.

Because the species occurs chiefly in basic to alkaline marshes, swamps and shallow water and appears to be local and uncommon north of Cape Cod, I have explored the possibility that it may have been an intentional or casual introduction in connection with recent wild fowl management and research activities at the Refuge. Correspondence with the Refuge Manager (Mr. Gorton Nightingale) and the Project Leader, Massachusetts Division of Fisheries and Game Field Headquarters (Mr. David Grice), elicited the information that a few plants were noted on the spoil bank of an artificial ditch in the meadows by Dr. John W. Brainerd in August, 1950. The ditch was blasted in October, 1949. Furthermore, a student assistant, Mr. Waldo Kennedy, is quoted as reporting its occurrence in two areas of the meadows in 1950, regarding its abundance to be "4" in each area. For a matter of comparison, he also designated *Carex comosa*, *Cicuta bulbifera*, *Bidens* spp. as "abundance 4." From my own observation these latter species are common in the Great Meadows wherever conditions are suitable. Hence, it seems likely that *E. Walteri* occurred there in 1950 not uncommonly in several and perhaps many localities. Nightingale writes, "This station's records disclose no planting of any sort done at the Great Meadows refuge by the Federal Government at any time and more specifically since its acquisition in 1944." Grice writes, "The state has made no plantings of any kind at Great Meadows," except for a small seeding of *Bromus* sp. in the summer of 1955 in the course of repairs to the lower dyke about one half mile downstream. Grice did bait his duck-banding traps with whole kernel corn (maize), occasionally substituting cracked corn or scratch feed, and in 1951 experimenting with barley and buckwheat. The scratch feed was a standard Wirthmore product tagged as containing cracked corn, wheat, oats and barley. It, as well as the barley and buckwheat, was supplied by a West-

boro grain dealer who writes "There is a possibility that some other seed which we sell may have fallen into the scratch feed we sold Mr. Grice. Most likely, if any did it would be Jap Millet, Hungarian Millet, Timothy, Red Top, Alsike Clover, Red Clover, Winter Rye, or Buckwheat." These are all commercial grains or grasses raised mostly on inland farms for the seed trade. I consider it reasonable to dismiss from consideration the possibility of their contamination with a native coastal plain species chiefly of basic to alkaline marshes and shallow water, which apparently seldom exhibits a weedy behavior.

It should be noted at this point that the Great Meadows are usually covered by the flood waters of the river from January through April. When the waters recede below the dykes, the shallow impoundments are chiefly fed by a small brook and all the filtrates from adjacent filter beds maintained by the Concord Sewer Department serving a population of some 10,000 people.

This grass, occurring chiefly in basic to alkaline marshes, swamps, and shallow water, ranges northward from Texas and Florida along the coastal plain to southern New England and disruptedly from southwest Quebec, central New York, to Wisconsin and Minnesota—a familiar distributional pattern. A significant number of these southern coastal plain plants reach the Merrimac River estuary (or beyond) and extend up its valley into southern New Hampshire and up its tributary, the Concord River, to Concord, Massachusetts, where they are usually uncommon and local. In the latter category, for example, are *Lycopodium inundatum* var. *Biglovii*, *Iris prismatica*, *Hibiscus palustris*, *Viola Brittoniana*, *Vernonia noveboracensis*, *Mikania scandens*, and *Liatris borealis*.

Thus it is not unreasonable to suggest that *Echinochloa Walteri* formerly was sparingly indigenous in Concord, although previously overlooked even by that indefatigable amateur student of Concord grasses of one hundred years ago, Mr. Edward S. Hoar, whose collections are preserved in the Club Herbarium. With the onset of river pollution ecological conditions, seemingly, have become more favorable for its development. Its present abundance, at least at the station where it was discovered, is somewhat confidently explained as a response to the pollution which also seems to account for the remarkable development of *Lemna*

*minor* and *Trapa natans* (op. cit.), the appearance of *Wolffia columbiana* in abundance (Eaton, 1939), as well as the increasingly conspicuous occurrence of *Potamogeton pusillus* (*P. panormitanus* Biv., cf. Eaton & Griscom, 1934), and *Phragmites communis* var. *Berlandieri* (Eaton, 1952).—RICHARD J. EATON, LINCOLN, MASSACHUSETTS.

## LITERATURE CITED

- EATON, R. J., 1939. *Wolffia columbiana* in Concord, Massachusetts. *RHODORA* **41**: 42-43.
- . 1947. *Lemna minor* as an aggressive weed in the Sudbury River. *RHODORA* **49**: 165-171.
- . 1952. Status of *Phragmites communis* var. *Berlandieri* along the Sudbury River, etc. *RHODORA* **54**: 135.
- . and L. GRISCOM, 1934. *Potamogeton panormitanus* in the Sudbury River. *RHODORA* **36**: 312-313.

POLYGONUM BICORNE RAF. INSTEAD OF *P. LONGISTYLUM* SMALL.—*Polygonum longistylum* is a rather showy species, common in the Gulf Southwestern states. One would expect that such a plant must surely have been noticed earlier than 1894, when it was described by Small (Bull. Torr. Bot. Club **21**: 169; in 1903 transferred to *Persicaria*, in Fl. S. E. U. S. 377, 1330). As might be expected, the much abused Rafinesque had named it in his *Florula Ludoviciana*, p. 29, 1817, with a description that for him was exceptionally full and clear: "Caulibus ramosis, ramis geniculatis, patulis, teretibus, intus crenulatis; foliis petiolatis, lanceolatis, glabris; floribus spicatis confertis octandris, distylis, staminibus inclusis, stylis exertis elongatis. Raf.—Renouée 1. Rob. p. 366. Large plant, four or five feet high, branches purplish, every one of which bears a fine, thick spike, about three inches long, of rose coloured flowers. This species, and all the following, grow in swamps, moist grounds, and along the rivers; they are called vulgarly *Curages*, in Louisiana; all their flowers smell like honey, and afford it in plenty to the bees. Blossoms from August to September." Later, under *P. vernum*, he adds: "This species, as well as the *P. bicornis* and *P. maculatum*, above, belong to the subgenus *Diocetus*, distinguished by having eight stamens, a compressed ovary and seed, two styles or stigmas, & c." In 1914 the new combination *Persicaria bicornis* (Raf.) Nieuwland was published